TPP Pipettor Turbo-Fix Operating instructions

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TPP Techno Plastic Products AG – 8219 Trasadingen, Switzerland

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TPP Pipettor Turbo-Fix

in accordance with EC directives | gemäss der EU-Richtlinien | est conforme au terme de la directives CE | de acuerdo con las directivas CE | in conformità alle direttive CE

2006/95/EC	Low voltage equipment
2004/108/EC	Electromagnetic compatibility
2011/65/EC	Restriction of Hazardous Substances
2002/96/EC	Waste Electrical and Electronic Equipment
2009/129/EC	Eco Design Directive
2006/66/EC	Battery Directive

is in compliance with the following normative documents: | mit den folgenden normativen Dokumenten übereinstimmt: | aux documents normatifs ci-après: | cumple las documentos normativos: | soddisfa le normative seguenti:

EN 61010-1	Safety requirements for electrical equipment for measurement, control and laboratory use - General requirements.
EN 61326-1	Electrical equipment for measurement, control and laboratory use - EMC requirements.

Standards for Canada and USA

CAN/CSA-C22.2 No. 61010-1	Safety requirements for electrical equipment for measurement, control and laboratory use - General requirements.
UL Std. No. 61010-1	Safety requirements for electrical equipment for measurement, control and laboratory use - General requirements.
FCC, Part 15, Class A	Emission

Trasadingen, October 25, 2013

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1 Introduction

1.1 Intended use

TPP Pipettor Turbo-Fix is a pipette controller designed for aspirating and dispensing aqueous solutions with plastic or glass pipettes of 1 to 100 ml volumes. It is intended for measurement, control and laboratory use.

1.2 Safety notes

1) Do not use or charge TPP Pipettor Turbo-Fix in an atmosphere with danger of explosion. Also, do not pipette highly flammable liquids such as acetone or ether.
2) When handling dangerous substances, comply with the material safety data sheet (MSDS) and with all safety guidelines such as the use of protective clothing and safety goggles. Never point a pipette in anyone's direction.
3) Avoid pipetting of liquids whose vapours could attack the materials PA (polyamide), POM (polyoxymethylene), FPM (fluor-rubber), NBR (nitrile-rubber), CR (chloroprene), silicone. Corrosive vapours could also damage metallic parts inside the device.
4) Use an original TPP mains adapter only and protect it from moisture, otherwise TPP Pipettor Turbo-Fix might be damaged.
5) Prolonged exposure of TPP Pipettor Turbo-Fix to UV-light can cause discolouration and/or yellowing of the plastic housing. However, this will not affect the performance of the device in any way.

Regardless of the listed safety notes, additionally applicable regulations and guidelines of trade associations, health authorities, trade supervisory offices, etc. must be observed.

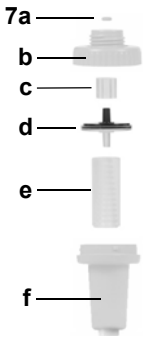
2 Description of the device

2.1 Scope of delivery

- TPP Pipettor Turbo-Fix device
- 1 rechargeable Li-ion battery
- Mains adapter
- Wall mount
- Sterile filter (spare)
- Quick Start Guide

2.2 Overview of TPP Pipettor Turbo-Fix

1 Aspiration button
2 Dispensing button
3 Thumb wheel to set maximum speed
4 Battery charge indicator
5 Socket for mains adapter cable
6 Handle
7 Nose piece



7 Nose piece “Stabifix”
- 7a O-ring
- 7b Nose piece housing, upper part
- 7c Filter rubber
- 7d Sterile filter
- 7e Pipette mount
- 7f Nose piece housing, lower part

3 Installation

3.1 Charging the battery

A full charge takes 3.5 hours. Before the first use, TPP Pipettor Turbo-Fix should be charged until the battery charge indicator (4) turns green, showing that the battery is full.

When the battery charge indicator (4) starts flashing red, TPP Pipettor Turbo-Fix can be used for around 100 pipetting cycles before shutting down. It should thus be recharged immediately.

TPP Pipettor Turbo-Fix has an integrated protection: it will not overcharge even if it is connected to power for indefinite time. To avoid unnecessary power consumption, it is recommended to unplug the power supply when the charge indicator is green. TPP Pipettor Turbo-Fix can be used while it is being charged.

The battery charge indicator provides various information:

Battery charge indicator	Battery status and information
Flashes red	Battery is low. Charging is needed.
Is red and power supply is connected	Battery is being charged.
Is green and power supply is connected	Battery is fully charged.
Flashes alternately red and green	Battery error. Check if the correct type of battery with correct polarity (+/-) and/or power supply are used.

3.2 Replacing the battery

1) Move the lid of the battery compartment upwards and remove it (a).
2) Replace the old battery with an original TPP rechargeable battery (Li-ion, min. 500 mAh) and make sure that it is inserted with the correct polarity (+/–).
3) Close the battery compartment with the lid (a).

3.3 Mounting of the wall mount

The wall mount serves to park TPP Pipettor Turbo-Fix.

To mount the wall mount, remove the protective foil from the adhesive tape at the back of the holder. Hold it with the sign <up> facing upwards and press it to the desired place. Make sure that the surface onto which the wall mount is mounted is smooth, clean and grease-free. Wait 24 hours before using the wall mount for the first time. Alternatively the wall mount can be fixed with the included screws.

4 Operation

4.1 Inserting the pipette

a) b)

The silicone pipette mount (7e) has a special conical channel to guarantee a firm and leak-proof grip of the pipette independently of its diameter.

Disassemble the nose piece (see "5.1 Cleaning and servicing" on page 10) and orient the pipette mount:

a) with the large opening facing down for pipettes > 2 ml (factory setting), or
b) with the small opening facing down for pipettes < 2 ml.

WARNING

Do not insert pipettes with force into TPP Pipettor Turbo-Fix, because they can break and cause injury, particularly thin pipettes made of glass.

4.2 Pipetting

Press the aspiration button (1) to fill the pipette and the dispensing button (2) to empty it.

The aspiration and dispensing speed can be controlled in two manners:

- Fine speed adjustment by varying the finger pressure on the buttons (1, 2).
- Step-less presetting of the maximum pump speed by turning the thumb wheel (3) to optimally match the pipette capacity (turning to the left = slower pump speed, for small pipettes; to the right = faster, for large pipettes).

To empty the pipette by gravity force, press the dispensing button only slightly in order to avoid reaching the trigger point where the pump starts running. Gravity dispensing is used for "to deliver" (TD) pipettes that are not of the "blow-out" type (blow-out pipettes have two thin rings or a frosted band around the neck).

TPP Pipettor Turbo-Fix is featured with a "TURBO" mode. Plug the mains adapter cable into the pipette controller and turn the thumb wheel completely to the right for maximal speed.

4.3 Troubleshooting

Problem	Probable cause	Remedy
Pipette drips (leak in the system).	Pipette is damaged or not fully inserted in the nose piece (7).	Reinsert a new pipette and push it all the way into the nose piece. Make sure that the pipette mount orientation is correct (see section 4.1).
	The inside of the pipette mount (7e) is damaged resulting in insufficient sealing of the pipette neck.	Replace the pipette mount.
	The filter rubber (7c) or the filter (7d) in the nose piece are damaged or missing causing a leak.	Replace the filter rubber and/or the filter.
Reduced aspiration efficiency or no liquid aspiration.	The filter (7d) is wet or dirty.	Replace filter.
	The nose piece (7) is not tight.	Tighten the nose piece, or replace defective parts.
	The battery is discharged (battery charge indicator flashes red).	Charge the battery.
	The battery is missing.	Insert the battery, or connect the instrument to the mains adapter.
	The battery is defective.	Replace the battery.
	The battery is wrongly inserted.	Insert correctly, note polarity (+) and (-).
Reduced operating time with fully charged battery.	The battery is worn.	Replace the battery.
	Wrong battery type is inserted.	Use only original Li-ion battery (#94756).
Extremely long charging time of battery.	Wrong mains adapter is used.	Use only original mains adapter.
Extremely short charging and operating time.	Wrong battery type is inserted.	Use only original Li-ion battery (#94756).

Problem	Probable cause	Remedy
Battery is not charging.	The battery is wrongly inserted.	Insert correctly, note polarity (+) and (-).
	Wrong battery type is inserted.	Use only original Li-ion battery (#94756).
	Wrong mains adapter is used.	Use only original mains adapter (see chapter 6).
Battery operation not possible.	The battery is wrongly inserted.	Insert correctly, note polarity (+) and (-).
	Wrong battery type is inserted.	Use only original Li-ion battery (#94756).
	The battery is missing.	Insert the battery.

5 Maintenance

5.1 Cleaning and servicing

TPP Pipettor Turbo-Fix can be cleaned with a cloth moistened with soapy water or with a 70 % ethanol. Never use acetone or other solvents.

The nose piece housing (7b, 7f), the pipette mount (7e) and the filter rubber (7c) can be autoclaved at 121 °C.

Disassembly of the nose piece:

Unscrew the nose piece (7) from the handle by turning it counter clockwise. Hold the upper part of nose piece housing (7b), press the lower part (7f) firmly against the upper part (7b) and turn it counter clockwise (left). The lower part of nose piece housing (7f) will disengage after about 1/8th of a turn.

Remove the pipette mount (7e), the filter (7d) and the filter rubber (7c), if required.

It is recommended to change the hydrophobic filter (7d) every three months. Should the filter get wetted or soiled, it has to be changed immediately. The filter must be oriented with the colored side (blue or red) facing upwards towards TPP Pipettor Turbo-Fix.

After maintenance work, perform a leak test to ascertain correct functioning of TPP Pipettor Turbo-Fix: liquid should not leak out of a filled pipette before the dispensing button is pressed.

5.2 Equipment disposal

TPP Pipettor Turbo-Fix device must not be disposed of with unsorted municipal waste.

Dispose of TPP Pipettor Turbo-Fix in accordance with the laws and regulations in your area governing disposal of devices.

6 Technical data

Pipetting speed	max. 13.5 ml/s (with a 50 ml serological pipette)
Battery	Type: rechargeable, Li-ion, min. 500 mAh Typical charging time: 3.5 hours
	Charging cycles: 500–1000 (when charging as indicated) Running time: at least 5500 cycles of aspiration and dispensing of 25 ml.
Mains adapter	Input: 100–240 VAC, 50/60 Hz Output: 17 VDC ±10%/180 mA ±10%
Materials	Housing: PA Nose piece housing: POM Pipette mount: Silicone Filter rubber: Silicone
Dimensions (H x W x D)	125 x 130 x 35 mm
Weight	195 g
Ambient conditions	Operation: 5–40 °C, max. 80% RH Storage: -10–50 °C, max. 95% RH

7 Spare parts

Spare part		**Part No.**
Nose piece “Stabifix” (7)	complete set with filter 0.45 µm, unsterile	94750
Wall mount	for holding Pipettor Turbo-Fix on the wall	94751
Filter 0.45 µm (7d)	sterile	94752
Filter 0.22 µm (7d)	sterile	94753
Pipette mount (7e)	silicone, to fix the pipette in the nose piece “Stabifix”	94754
Filter rubber (7c)	silicone, to fix the filter in the nose piece “Stabifix”	94755
Battery Li-ion	Lithium polymer, min. 500 mAh	94756
Battery compartment lid	transparent, TPP yellow	94757
Housing (6)	transparent, TPP yellow	94758